AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Previously Presented): A positive electrode active material which comprises a lithium-cobalt composite oxide represented by the formula $Li_pCo_xM_yO_zF_a$ (wherein M is a transition metal element other than Co or an alkaline earth metal element, $0.9 \leqq p \leqq 1.1$, $0.980 \leqq x \leqq 1.000$, $0 \leqq y \leqq 0.02$, $1.9 \leqq z \leqq 2.1$, $x+y=1$ and $0 \leqq a \leqq 0.02$) and comprising a mixture comprising substantially spherical first particles of lithium-cobalt composite oxide having such a sharp particle size distribution that the volume basis cumulative size D10 is at least 50% of the average particle size D50, and the volume basis cumulative size D90 is at most 150% of the average particle size D50, and second particles of lithium-cobalt composite oxide filling the space among the above lithium-cobalt composite oxide particles, in a mass ratio of first particles/second particles of from 1/2 to 9/1;

wherein the first particles are large particles having an average particle size D50 of from 7 to 20 μm, and the second particles are small particles having an average particle size of from 10 to 30% of D50 of the first particles; and

wherein an aspect ratio of the first particles is from 2/1 to 1/1.

Claim 2 (Withdrawn): The positive electrode active material according to Claim 1, wherein in the formula, M is at least one member selected from the group consisting of Ti, Zr, Hf, V, Nb, Ta, Mn, Mg, Ca, Sr, Ba and Al.

Claim 3 (Previously Presented): The positive electrode active material according to Claim 1, wherein the average particle size D50 of the first particles is from 7 to 15 μm, the specific surface area is from 0.3 to 0.7 m^2/g, the half value width of the diffraction peak on

(110) plane at $2\theta=66.5\pm1°$ is from 0.07 to 0.14° as measured by X-ray diffraction using CuKα as a radiation source, and the press density is from 3.1 to 3.4 g/cm^3.

Claim 4 (Canceled):

Claim 5 (Previously Presented): The positive electrode active material according to Claim 1, wherein the first particles have a press density of from 2.9 to 3.2 g/cm^3, and the second particles have a press density of from 2.7 to 3.1 g/cm^3.

Claim 6 (Withdrawn): A process for producing the positive electrode active material as claimed in Claim 1, which comprises firing, as a cobalt source, a mixture of substantially spherical large particle size cobalt hydroxide or tricobalt tetraoxide having such a sharp particle size distribution that the average particle size D50 is from 7 to 20 μm, the average particle size D10 is at least 50% of the average particle size D50 and the average particle size D90 is at most 150% of the average particle size D50, and small particle size cobalt hydroxide or tricobalt tetraoxide having an average particle size D50 of from 10 to 30% of the average particle size D50 of the large particles, in a proportion of from 9:1 to 1:2 as the cobalt atomic ratio, at a temperature of from 700°C to 1050°C in an oxygen-comprising atmosphere.

Claim 7 (Withdrawn): The production process according to Claim 6, wherein the large particle size cobalt hydroxide or tricobalt tetraoxide has a press density of from 1.7 to 3.0 g/cm^3, and the small particle size cobalt hydroxide or tricobalt tetraoxide has a press density of from 1.7 to 3.0 g/cm^3.

Claim 8 (Withdrawn): The production process according to Claim 6, wherein each of the large particle size cobalt hydroxide or tricobalt tetraoxide and the small particle size cobalt hydroxide or tricobalt tetraoxide has a specific surface area of from 2 to 20 m^2/g.

Claim 9 (Withdrawn): The production process according to Claim 6, wherein the large particle size or small particle size cobalt hydroxide has a half value width of the diffraction peak on (001) plane at $2\theta=19\pm1°$ of from 0.18 to 0.35° and a half value width of the diffraction peak on (101) plane at $2\theta=38\pm1°$ of from 0.15 to 0.35°, in an X-ray diffraction spectrum using CuKα-ray.

Claim 10 (Withdrawn): A process for producing the positive electrode active material as claimed in Claim 1, which comprises firing, as a cobalt source, a mixture of substantially spherical cobalt hydroxide or tricobalt tetraoxide having such a sharp particle size distribution that the average particle size D50 is from 7 to 20 μm, the average particle size D10 is at least 50% of the average particle size D50, the average particle size D90 is at most 150% of the average particle size D50, and the average particle size of secondary particles formed by agglomeration of primary particles is from 8 to 20 μm, and cobalt oxyhydroxide having an average particle size of secondary particles formed by agglomeration of primary particles of from 7 to 20 μm, in a proportion of from 5:1 to 1:5 as the cobalt atomic ratio, at a temperature of from 700°C to 1050°C in an oxygen-comprising atmosphere.

Claim 11 (Withdrawn): The production process according to Claim 10, wherein the cobalt oxyhydroxide has a half value width of the diffraction peak on (220) plane at $2\theta=31\pm1°$ of at least 0.8° and a half value width of the diffraction peak on (311) plane at

$2\theta=37\pm1°$ of at least 0.8°, in an X-ray diffraction spectrum using CuKα-ray, and has a specific surface area of from 10 to 80 m^2/g.

Claim 12 (Withdrawn): The production process according to Claim 10, wherein as the cobalt hydroxide, substantially spherical cobalt hydroxide having a half value width of the diffraction peak on (001) plane at $2\theta=19\pm1°$ of at least 0.15° and a half value width of the diffraction peak on (101) plane at $2\theta=38\pm1°$ of at least 0.15°, in an X-ray diffraction spectrum using CuKα-ray, and having a specific surface area of from 2 to 30 m^2/g, is used.

Claim 13 (Withdrawn): The production process according to Claim 10, wherein the tricobalt tetraoxide has a half value width of the diffraction peak on (220) plane at $2\theta=31\pm1°$ of at least 0.08° and a half value width of the diffraction peak on (311) plane at $2\theta=37\pm1°$ of at least 0.10°, in an X-ray diffraction spectrum using CuKα-ray, and has a specific surface area of from 2 to 10 m^2/g.

Claim 14 (Withdrawn): The production process according to Claim 10, wherein the cobalt hydroxide or the tricobalt tetraoxide has a press density of from 1.2 to 2.5 g/cm^3.

Claim 15 (Withdrawn): The production process according to Claim 10, wherein the lithium-cobalt composite oxide has a half value width of the diffraction peak on (110) plane of from 0.07 to 0.14°, a specific surface area of from 0.3 to 0.7 m^2/g, a heat generation starting temperature of at least 160°C, and a press density of from 3.1 to 3.4 g/cm^3.

Claim 16 (Previously Presented): A positive electrode which comprises the positive electrode active material as claimed in Claim 1.

Claim 17 (Withdrawn): A positive electrode which comprises a positive electrode active material obtained by the production process as claimed in Claim 6.

Claim 18 (Previously Presented): A lithium secondary battery comprising the positive electrode active material as claimed in Claim 16.

Claim 19 (Withdrawn): A positive electrode which comprises a positive electrode active material obtained by the production process as claimed in Claim 10.

Claim 20 (Withdrawn): A lithium secondary battery comprising the positive electrode active material as claimed in Claim 17.

Claim 21 (Withdrawn): A lithium secondary battery comprising the positive electrode active material as claimed in Claim 19.

Claim 22 (Previously Presented): The positive electrode active material according to Claim 1, wherein the press density of the lithium-cobalt composite oxide is from 3.1 to 3.40 g/cm^3.

Claim 23 (New): The positive electrode active material according to Claim 1, wherein the ranges of p, x, y, z and a in the formula $Li_pCo_xM_yO_zF_a$ are $0.9 \leqq p \leqq 1.1$, $0.990 \leqq x \leqq 1.0$, $0.0005 \leqq y \leqq 0.01$, $1.9 \leqq z \leqq 2.1$, $x+y=1$ and $0 \leqq a \leqq 0.02$.

Claim 24 (New): The positive electrode active material according to Claim 1, wherein element M and/or F are present in formula $Li_pCo_xM_yO_zF_a$; and

wherein each of the element M and F is present on a surface of the lithium-cobalt composite oxide particles.